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Thematic Analysis for Interactive Systems Design: A Practical Exercise

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Abstract. Within the fields of Human-Computer Interaction (HCI) and Computer-Supported Cooperative Work (CSCW), there is a wide acknowledgement that, in order to design useful and usable interactive systems, it is key to accurately understand users, their contexts and the practices they engage with. For that, HCI and CSCW professionals have for long been drawing on socio-scientific methods as a means towards it. While much has been said in terms of methods that can be used to capture the user contexts and associated practices, considerably less is found on how the collected data can be systematically analysed, in order to generate trustworthy representations of what has been heard and observed from participants. One possible reason for that is the lack of training of researchers in the area to use appropriate data analysis techniques. This masterclass sets out to address this gap. It aims at providing HCI and CSCW researchers and practitioners with deep knowledge about one of the most popular data analysis technique of the moment: Thematic Analysis (TA). Through a practical exercise, the masterclass will introduce and explore the procedures involved in carrying out TA, so to equip professionals from the field with the necessary tools to have a good understanding of the relevant user contexts and practices for the design of innovative, useful and usable interactive systems.

Contextualisation

Socio-scientific methods have been for long underpinning much of research and practice within the fields of Human-Computer Interaction (HCI) and Computer-supported Cooperative Work (CSCW) (Randall et al. 2007; Bannon et al. 2011; de Carvalho 2013; Wulf et al. 2018). These fields have been built upon the premise that understanding users, their contexts and their practices is essentially relevant for the design of digital technologies that can effectively support users with their activities – i.e., be useful – and can be used without problems – i.e., be usable (Sharp et al. 2006; Harper et al. 2008). In order to achieve that, a broad pallet of methods have been summoned for the **collection** of relevant data concerning those aspects.

Within the realms of the *socio-informatics* tradition, special attention has been placed on *qualitative methods* (Wulf et al. 2018). *In-depth interviews* (Hermanowicz 2002), observational methods like *shadowing* (McDonald 2005; Czarniawska 2007) and other forms of *participant observation* (McKechnie 2008), *diaries* (Gaver et al. 1999), to name but a few, have been used in a regular basis to accurately capture the big picture of the user contexts and what goes on in it. Nevertheless, as recurrently acknowledged in the literature, independent of how good a picture is, it does not speak for itself: it must be interpreted. This means that it is extremely important that all collected data be submitted to careful **analysis**, in order to make it clear what is interesting about the picture and why. The collected data must be always connected back to research questions, which should concern the research problem under investigation (Braun and Clarke 2012).

Despite the fact that there is a wealthy of qualitative data analysis approaches available to researchers, it is not uncommon to see the analysis of the rich data collected in user studies neglected. This is quite an old research problem, which is shared by different fields of research (Glaser and Strauss 1967; Miles and Huberman 1994; Mays and Pope 1995). However, worse than neglecting data analysis, it is to claim the use of one or another approach as an approving bumper sticker, as it happens sometimes – maybe, more frequently than it would be desirable.

In the past, Grounded Theory (GT) (Glaser and Strauss 1967; Strauss and Corbin 1998) used to be the label in that sticker (Barbour 2001), but after increased criticism of the research community towards the banalisation of such a powerful research instrument (Wagner et al. 2010), Thematic Analysis (TA)¹ has

¹ It is worth pointing out that different versions of TA can be found in the literature, as for example, the one described by Gibson and Brown (2009) and Miles and Huberman (1994). This masterclass refers to the variant introduced by Braun and Clarke (2006) and further elaborated in Braun and Clarke (2012), due to its systematic and sophisticated approach to TA. As Braun and Clarke (2012) correctly puts it, until early 2000, TA has been widely used, but poorly defined. Braun and Clarke's version of TA was arguably the first to clearly define steps to this approach of analysis and clearly articulate its procedures.

slowly taken its place, as it became a well-established qualitative data analysis method and it increased in popularity, under the understanding that it is a light-weight version of GT, which can still grant research results *trustworthiness* and *authenticity*, two quality criteria recurrently associated with qualitative research (Guba 1981; Whitemore et al. 2001; Morrow 2005; Bryman 2008).

While TA is arguably a method more accessible, flexible and self-contained, as it does not bring with itself any conceptual and theoretical frame, as is the case of GT, phenomenological analysis (Finlay 2012; Finlay and Eatough 2012), discourse analysis (Wooffitt 2005; Trappes-Lomax 2018), and many others, it is still a systematic approach, which demands careful handling. It is a unique method in its own, which has been proven valuable in supporting qualitative researchers in finding, organising, and providing insights in patterns of meaning across data sets. Put differently, TA is a powerful method to identify and make sense of commonalities in the way that a particular topic is portrayed in a set of collected data (Braun and Clarke 2006, 2012). Instead of being seen as a light-weight version of other well-established methods, it should be seen as a foundational and fundamental approach to other qualitative data analysis techniques (Braun and Clarke 2012; Lazard and Capdevila 2017).

TA provides qualitative researchers with the necessary tools to carry out thorough, plausible and sophisticated data analysis. It allows researchers to identify and elaborate a deep understanding of both collective and shared experiences and meanings. It allows researchers and practitioners to navigate along three different dimensions of qualitative research, concerning orientation towards (1) **theory** (*inductive* versus *deductive*); (2) **data** (*experiential* versus *critical*), and (3) **ontology** (*essentialist* versus *constructionist*) (Braun and Clarke 2012). Its versatility makes it a good fit for participatory research projects, especially those predicated on Community-based Participatory Research (CBPR) (Holkup et al. 2004; Boylorn 2008), where the involved parts are not necessarily trained researchers. It is also adequate for multimethods research, supporting the analysis of different types of artefacts, as for example, interview transcripts, fieldnotes and other types of textual, aural, visual artefacts (Braun and Clarke 2012).

TA has, therefore, a great potential for HCI and CSCW research, which very often involve users in participatory approaches for the design and development of interactive system. It provides professionals of these fields with a framework to develop a deep and accurate understanding of the users, their contexts and their practices, as they try to find solutions for the many types of wicked problems underpinning the field (Rohde et al. 2016). Using TA, does not mean to limit the creativity inherent to design. Instead, it means finding the right food for thought to feed the process, so that the resulting solutions really speak to the user contexts and needs and, as such, can support users with their practices, in a usable manner.

Goals and Activities

The goals of this masterclass is to demystify the use of TA and demonstrate how the method can be employed for the design and development of digital technologies. It will introduce the grounds and mechanisms of the method and give the participants the opportunity to engage in a practical exercise to master it. Furthermore, the masterclass will dedicate special attention to demonstrate how TA can be used to (a) guarantee rigour to the user studies carried out as part of user-centred and practice-based design projects and (b) support the generation of strong conceptual and theoretical constructs out of it.

During the masterclass, the six steps of the approach proposed by Braun and Clarke (2012) – namely (1) *familiarisation with the data*; (2) *codes generation*; (3) *themes search*; (4) *review of potential themes*; (5) *themes naming and definition*; and (6) *report production* – will be introduced, and participants will have the opportunity to test their understanding about each of these steps by completing each of them as they go on to analyse a short data artefact. Participants will be introduced to the mechanisms of coding (Benaquisto 2008) and systematic qualitative data analysis. Furthermore, they will learn about how a systematic data analysis can contribute towards the *credibility*, *transferability*, *dependability* and *confirmability* of research findings (Guba 1981).

By the end of the masterclass, participants should be able to tell what it takes to really engage in TA and to carry it out thoroughly and with quality. They will become aware of the many decisions that they will have to take as they progress in the analysis process, and what consequences this will have in the results. They will also have a complete understanding of what does it mean to say that a TA has been carried out, so to avoid being confronted in the future when saying that they have engaged in it.

Target Group

This masterclass targets any HCI and CSCW researcher interested in: (1) learning or perfecting the mechanisms and procedures of TA; (2) understanding how it can be used for user-centred and practice-based design of interactive systems; and (3) find out how it can contribute to the quality of the designed artefacts.

Format and Duration

This masterclass is originally planned to happen as a co-located activity. Alternatively, an on-line version of it will be carried out, in case the conference turns out to be in a hybrid or complete online format.

Given the extent of the masterclass activities and the time needed for them, this masterclass is planned as a full-day event. In the eventual case of a hybrid or online conference, the activities will be carried out between 15h00 and 20h00 CET, in an attempt to accommodate people from different time zones.

Number of Participants

To make it viable to assist the participants properly in all the masterclass activities, a maximum of 10 participants will be accepted.

Required Resources

In terms of infrastructure, a lecture hall capable of accommodating the maximum number of participants according to the social distancing regulations in place by the time of the conference due to the COVID-19 pandemics, provided with a projector, a proper space for projection, sound system and flipchart will suffice.

Shall the conference and, consequentially, the masterclass happen online, a laptop or personal computer equipped with a webcam will be enough. In this case, the masterclass will run over Zoom.

In the case of a co-located event, participants will be required to bring a laptop with MaxQDA 2020 Standard installed². In case participants do not have a licence for the application, they are advised to download and install its trial version before the masterclass. The trial version is valid only for a few days can be installed only once. Therefore, participants should assure that the version will still be active by the time of the masterclass by the time it happens.

Organiser's Short Bio

Fabiano Pinatti, PhD, is an Associate Researcher at the Institute of Information Systems and New Media of the University of Siegen (Germany), the EUSSET Community Building Chair and one of the EUSSET Competence Network Co-Chairs. He holds a BSc and a MSc in Computer Science from the Federal University of São Carlos, São Paulo, Brazil, and a multidisciplinary PhD developed within a joint project between the Interaction Design Centre of the Department of Computer Science and Information Systems, University of Limerick, Ireland, and the Department of Sociology at the same university. His interests span Human-Computer Interaction (HCI), Computer Supported Cooperative Work (CSCW), Practice-based Computing, Interaction Design,

² <https://www.maxqda.com/products>

Software Accessibility, Cyber-Physical Systems, Mobile and Nomadic Work and Informatics in Education. The focus of his research is on technologically-mediated human practices, more specifically on the understanding on how practices can help identifying the design space of new and innovative technologies, and how they can shape and be shaped by their usage. He has published several articles on topics related to these fields of research in prestigious international conferences. He has been practicing Thematic Analysis since 2013. The method has been central to many of his research studies and has been supporting him in generating relevant conceptual and theoretical constructs to advance the state of the art of HCI and CSCW research.

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